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Two new protoplophorid oribatids from Mexico (Acari: Oribatida)[1]

by
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Abstract: Descriptions are given of two new oribatid species, belonging to the family Protoplophoridae Grandjean: *Bursoplophora muraiae* sp. n. and *Prototritia (Prototritia) palaciosi* sp. n. *Aedoplophora* Grandjean, 1932, recently synonymised with *Prototritia* Berlese, 1910 genus is reconstructed as a subgenus.
Key words: Acari, Oribatida, Protoplophoridae, new species, Mexico

Introduction

In the framework of the project supported by the Hungarian Commission of the Technical Development (OMFB) and the Mexican CONACyT we studied the connection between the vegetation and the oribatid fauna of Mexico. As it was previously reported in several publications (Borhidi *et al.* 1996, Borhidi & Mahunka 1997) investigations were carried out at several assigned sampling sites, UNAM Chamela Biological Station at Jalisco was one of them. The results of this project were published in several scientific papers (e.g. Mahunka & Palacios-Vargas 1996).

The above mentioned Biological Station of UNAM is located at Jalisco in a dry forest "bosque espinoso seco" near the seaside. In the soil samples collected here species of primitive taxa (e.g. Protoplophorida) were found in especially high numbers, and interestingly the number of individuals in these otherwise rare species was also remarkably high. A Haplochthoniidae species was described earlier (Mahunka & Mejia-Recamier 1998), now we will deal with species of the Protoplophoridae family: a *Bursoplophora* Subias & Pérez-Iñigo, 1978 and a *Prototritia (Prototritia)* Berlese, 1910 species are described here. The occurrence of this family was formerly recorded (Palacios-Vargas 1994), in the literature a *Protoplophora* sp. is mentioned.

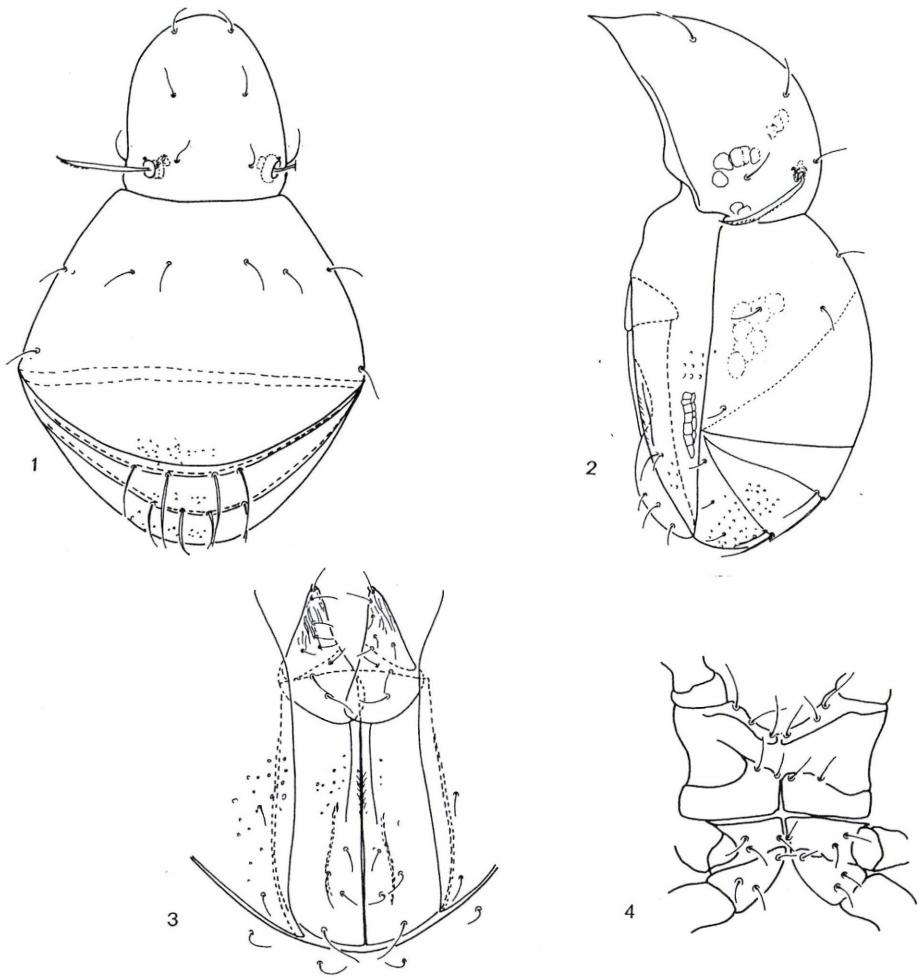
The members of this family have outstanding importance for the phylogenetic system. Several special forms are known, and some authors, especially Grandjean (e.g. 1932, 1954) and Bernini (1983) dealt with them in detail. The value of the features used in their identification is still debated, numerous changes are expected following the description of the new taxa. This time in the *Bursoplophora* Subias & Pérez-Iñigo, 1978 genus several features were found that had been formerly used by the taxonomists for the separation of supraspecific taxa (number of setae in the coxisternal region and on the ano-adanal plate), but it is clear now, that these features in this family can only be used after further investigations, but not as especially reliable distinguishing characters.

[1] Project: Biodiversity of Mexican mites (see Borhidi *et al.* 1996). CONACyT, Mexico – OMFB, Hungary. This work was also sponsored by the Hungarian Scientific Research Fund (OTKA 16729).

Bursoplophora muraiae sp. n.

Measurements: Length of aspis: 118-127 μm, length of notogaster: 169–175 μm, height of notogaster: 99–109 μm.

Aspis: Rostral part anteriorly is very narrow in lateral view (Fig. 2), rostral apex rounded, its margin smooth, without any incision or teeth. Cuticle mostly smooth, some polygonal pattern visible laterally and basally. Five pairs of prodorsal setae smooth and simple, except the minute *exa* all nearly equal in length. Sensillus conspicuously long, spindle-shaped, its lateral margin well ciliate distally. Lateral carina absent, lateral rim well developed basally, absent anteriorly.



Figs 1–4. *Bursoplophora muraiae* sp. n.;1 = body from dorsal view; 2 = body from ventral view; 3 = anogenital region; 4 = coxisternal region

Notogaster (Fig. 1): On the surface some weak polygonal areolae visible, the pygidial part distinctly punctate. Setae *c* and *p* simple, fine and smooth, setae *e*, *f* and *h* much stronger and longer, but without median thickening, true setiform. Their surface slightly roughened.

Ventral regions: Epimeral setal formula: 3 – 2 – 3 – 3 (Fig. 4). Genital plates with the large posterior tectum, covering the ano-adanal plates. Their anterior part elongated, narrowing, well sclerotised. Nine pairs of genital setae present, all simple, thin, their length gradually become longer posteriorly. Anoadanal plates brick shaped, on their surface some foveolae also visible. The characteristic pouches are shallow. The position of the ano-adanal setae as shown in Fig. 3.

Legs: Legs tridactylous, median claws thicker than the lateral ones, but all claws gradually getting longer from leg I to leg IV. All solenidia , first of all ω_1 conspicuously long, reaching to the distal end of the tarsus. Both solenidia on tarsus II also very long.

Material examined: Holotype: Mexico, Chamela, forest near the seashore, collected 24th, X. 1995. Berlese sample from litter and soil in a dry forest "bosque espinoso seco" with *Xanthoxylon* and *Pachycereus* trees. 6 paratypes found from the same sample. Leg. Mahunka S. and A. Borhidi. No. 317. Holotype (1599-HO-98) and 3 paratypes (1599-PO-98) (with identification numbers of the specimens in the Collection of Arachnida) deposited in the Hungarian Natural History Museum, Budapest, 2 paratypes in the Laboratorio de Ecologia y Sistemática de Microartrópodos, Depto. Biologia, Fac. Ciencias, UNAM, Mexico and 1 paratype in the Muséum d'Histoire naturelle, Genève.

Remarks: The species of the *Bursoplophora* Subias & Pérez-Iñigo, 1978 genus can be easily divided into species groups on the basis of the of the following distinctive characters: whether the body surface is smooth or strongly punctate, and by the numbers of the anal setae. The type species, (*B. iberica* Subias & Pérez-Iñigo, 1978) is not punctate, and has 6 pairs of ano-adanal setae. Among the species known till today only *B. meridionalis* Bernini, 1983 has less then 6 pairs of ano-adanal setae (4), and its body surface is smooth. *B. tyrrhenica* Bernini, 1983, is also smooth, but similarly to the type species it also has 6 pairs of setae. *B. bivaginata* Grandjean, 1932 is punctate, and possesses 6 pairs of ano-adanal setae, similarly *B. ethiopica* Mahunka, 1982 is punctate, possesses 6 pairs of ano-adanal setae, *B. insularis* Kahwash, Subias & Ruiz, 1989 is punctate, possesses 6 pairs of ano-adanal setae, *B. madegassica* Mahunka, 1994 is punctate and possesses 6 pairs of ano-adanal setae.

The new species is strongly punctate and possesses 4 pairs of ano-adanal setae, and hence represents a new, unknown type. Based on these characters this species is markedly different from the formerly known species. It is also clear, that these features are not applicable for the separation of supraspecific taxa.

Etymology: We dedicate the new species to Dr. Éva Murai-Kovács, the outstanding parasitologist of the Hungarian Natural History Museum, who founded and edited several scientific periodicals. We would like to commemorate her 70th birthday.

Prototritia palaciosi sp. n.

Measurements: Length of aspis: 165-176 μm, width of aspis: 130–138 μm, length of notogaster: 265–280 m, height of notogaster:170–195 μm.

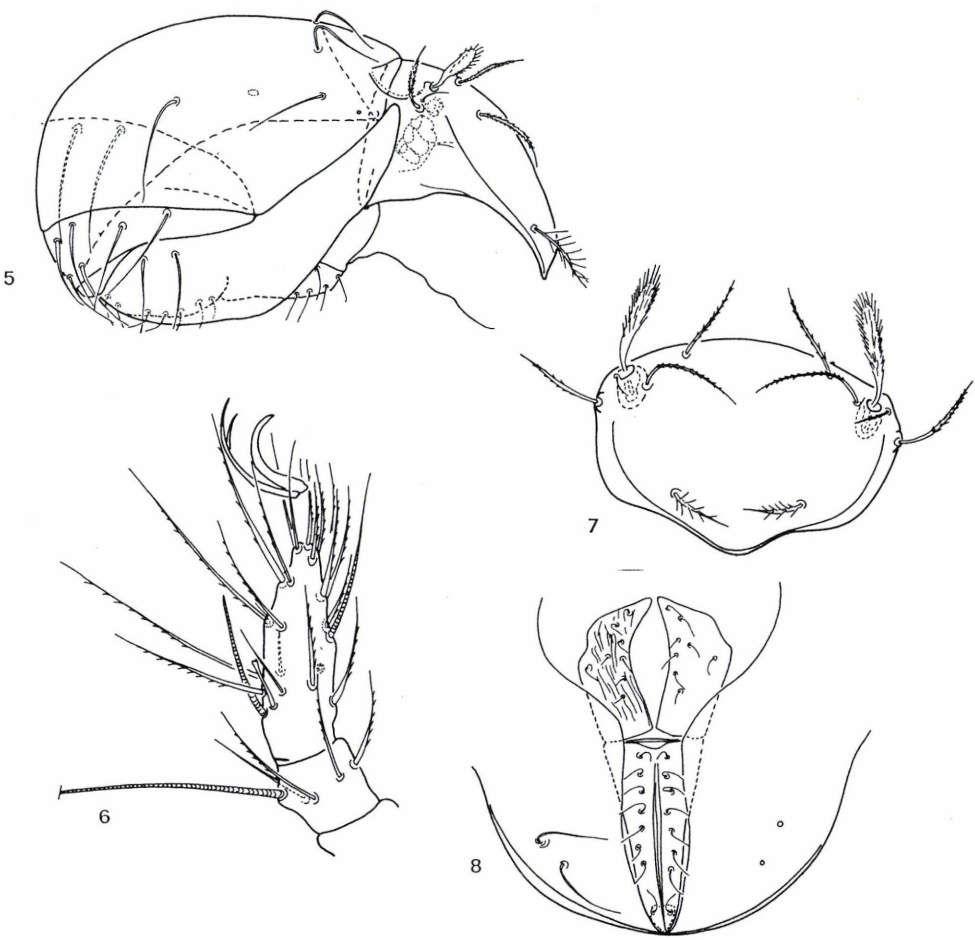
Aspis: A small, rounded rostral apex observable, slightly flattened in lateral view, rounded in dorsal view. Lateral carinae well discernible, but not reaching to the small bothridia. Notogastral setae conspicuously thick, well ciliated. Rostral setae with extraordinary long

branches, the others densely ciliated. The outer exobothridial setae expanded medially (Fig. 7). Sensillus elongated, fusiform, covered with long cilia.

Notogaster (Fig. 5): All notogastral setae conspicuously long, among them setae *h* and *p* thicker than the others.

Ventral regions: Surface of the genital plates striated longitudinally. Eight pairs of simple genital setae present. Anal plates long, a nearly cordiform structure observable in their distal part. Eight pairs of long, simple anal setae present they are arranged in one longitudinal row. They are nearly equal in length their direction typical, as shown on Fig. 8.

Legs: The shape and setae of legs are quite similar to that of *Prototritia glomereta* (Grandjean, 1932). On the tarsus of leg I. ε, ω_1, ω_2 originates nearer to each other than in *glomerata* (Fig. 6). On leg IV claws are considerably longer than on legs I–III.



Figs 5-8. *Prototritia palaciosi* sp. n.; 5 = body from lateral view; 6 = tibia and tarsus of leg I; 7 = rostral part of prodorsum in anterodorsal view; 8 = anogenital region

Material examined: Holotype collected: Mexico, Chamela, forest near the seashore 24th, X. 1995. Berlese sample from litter and soil in a dry forest "bosque espinoso seco" with *Xanthoxylon* and *Pachycereus* trees. No. 19. 8 paratypes from the same sample. Leg. Mahunka S. and A. Borhidi. 10 paratypes: Chamela, forest near the seashore 24th, X. 1995. Berlese sample from litter and soil in a forest along the creek, with *Crescentia* and *Hematoxylus*. Leg. Mahunka S. and A. Borhidi. No. 20. 22 paratypes: Chamela, forest near the seashore 24th, X. 1995. Berlese sample from litter and soil in a closer forest with lianes. Leg S. Mahunka S. and A. Borhidi. No. 21. Holotype (1600-HO-98) and 20 paratypes (1600-PO-98) (with identification numbers of the specimens in the Collection of Arachnida) deposited in the Hungarian Natural History Museum, Budapest, 18 paratypes in the Laboratorio de Ecologia y Sistematica de Microartrópodos, Depto. Biologia, Fac. Ciencias, UNAM, Mexico and 2 paratypes in the Muséum d'Histoire naturelle, Genève.

Remarks: The *Prototritia* Berlese, 1910 and *Aedoplophora* Grandjean, 1932 genera were recently synonymised (see Bernini 1983 and Balogh & Balogh 1992). The study of the morphological characteristics, especially the anal setae, of the new species raises the question whether the synonymization of *Prototritia* Berlese, 1910 and *Aedoplophora* Grandjean, 1932 were correct, especially in the light of the fact that in Bernini (1983) erected a subgenus (*Siciliophora*) within the *Prototritia* genus. In our opinion the 6 + 4 arrangement of the anal setae is so characteristic as opposed to the 8 or 9 setae arranged in one line, that we propose the recognition of the former *Aedoplophora* Grandjean, 1932 genus as a subgenus at least. The new species is well distinguishable from all heretofore known *Prototritia* species by the form of the prodorsal setae (e.g. very long cilia on rostral setae and the medially dilated exobothridial setae).

Etymology: We dedicate the new species to Dr. J. G. Palacios-Vargas, Professor of UNAM, the Mexican leader of the joint Hungarian-Mexican project.

Acknowledgement

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